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A NEW METHOD FOR CONSTRUCTING ARTIFICIAL NEURAL NETS

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12. ABSTRACT (Maximum 200 words)

Research is being conducted on the methodology for development and accuracy assessment of thematic maps.

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AFOSR --- TECHNICAL REPORT

This report describes activities and results associated with this grant.

Activities of V. Vapnik

Dr. Vapnik gave a series of lectures during 1993 in the Statistics Department at Rutgers University. These weekly lectures began with an introduction to neural nets and developed the theory of the subject and indicated a variety of applications.

The audience consisted of students and faculty in statistics, mathematics and computer science.

The purpose of the lectures was two-fold: a) to introduce the subject in some depth to a wide audience of researchers, and b) to generate interest among students, especially in the Statistics Department, in doing research in the area.

Dr. Vapnik was made a visiting professor in the department and visited the department one day a week while being employed full time by Bell Telephone Laboratories.

Dr. Vapnik continued his research on neural nets at Bell Labs and also continued working on a book on the subject.

Activities of W. Strawderman

Dr. Strawderman scheduled Dr. Vapnik's seminar series, communicated with other departments to advertise the series and encourage their participation.

His research interests connect closely with the aims of the project in that he is interested in problems of image construction and analysis. He has been actively involved in research on development of thematic maps and analyzing their accuracy. The methods he employs are primarily based on Bayesian analysis of Markov random field models using Gibbs sampling and other computer intensive methods.

During the extension period of the grant, satellite images and low level aerial photography images of parts of New Jersey were purchased. Work is under way on methodology for development and accuracy assessment of thematic maps. This data will play a key role in the development and analysis of those methods.

Publications associated with the grant

No publications related to the research have been produced to date. The work described above should lead to several publications.

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